



Australian Government

UEPOPS068 Operate a hydro generator synchronous condenser pump unit

Release: 1

UEPOPS068 Operate a hydro generator synchronous condenser pump unit

Modification History

Release 1. This is the first release of this unit of competency in the UEP Electricity Supply Industry - Generation Sector Training Package Release 2.0.

Application

This unit involves the skills and knowledge required to start-up, maintain a steady state of running and then shutdown a hydro unit operating either as a generator, synchronous condenser or pump.

Using synchronous condenser operations in hydro generation facilities can improve the quality of electric power being supplied, and it assists in stabilising the network during faults.

Competency in this unit requires the ability to plan and prepare work and to operate, test, analyse and report on hydro generator synchronous condenser plant. Individuals will, in general, work under supervision, in a power generation facility as an operator.

Power generation plant operators are trained and authorised to isolate, prepare plant and issue permits to work.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

There are no prerequisite units

Competency Field

Operations

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|--|
| 1 Plan and prepare work | <ul style="list-style-type: none">1.1 Work health and safety (WHS)/occupational health and safety (OHS) regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, environmental requirements and workplace procedures are identified, applied and monitored1.2 Work requirements are identified from relevant personnel and documentation in accordance with workplace procedures1.3 Turbine running up and loading schedule are ascertained from relevant documentation in accordance with workplace procedures1.4 Hydro generator synchronous condenser plant inspection, preoperational tests and field preparation for service are carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures1.5 Hydro generator synchronous condenser plant operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures1.6 Sequence for recommissioning of hydro generator synchronous condenser plant is determined in accordance with workplace procedures |
| 2 Operate hydro generator synchronous condenser plant | <ul style="list-style-type: none">2.1 Hydro generator synchronous condenser plant is operated in accordance with manufacturers' recommendations and specifications, and workplace procedures2.2 Hydro generator synchronous condenser plant is monitored to detect deviations from normal operating conditions, in accordance with workplace procedures2.3 Corrective actions are taken to rectify abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| 3 Test hydro generator synchronous condenser plant operation | <ul style="list-style-type: none">3.1 Tests are performed on hydro generator synchronous condenser plant in accordance with workplace procedures3.2 Hydro generator synchronous condenser plant is returned to required operational status upon completion |

- of testing in accordance with workplace procedures
- | | | |
|---|------------|--|
| 4 Analyse hydro generator plant faults | 4.1 | Cause of abnormal hydro generator synchronous condenser plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures |
| | 4.2 | Hydro generator synchronous condenser plant integrity and personnel safety is maintained through consultation with relevant personnel, technical and operational documentation in accordance with workplace procedures |
| | 4.3 | Relevant personnel are notified when defects are detected in accordance with workplace procedures |
| 5 Complete documentation | 5.1 | Plant problems, movements and status are reported in accordance with workplace procedures |
| | 5.2 | Documentation is updated in accordance with workplace procedures |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEP Electricity Supply Industry - Generation Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS335 Operate a hydro generator synchronous condenser pump unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>

Assessment Requirements for UEPOPS068 Operate a hydro generator synchronous condenser pump unit

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - risk control measures
 - emergency procedures
 - safe working practices
- communicating with personnel
- completing workplace documentation
- identifying and responding to abnormal plant operating conditions
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- interpreting manuals
- monitoring and inspecting hydro generator synchronous condenser pump unit plant operations
- operating hydro generator synchronous condenser pump unit plant
- organising resources
- planning hydro generator synchronous condenser pump unit plant work
- recognising hydro turbine generator/pump unit plant status
- reporting on hydro generator pump unit plant status
- testing hydro turbine generator synchronous condenser pump unit plant operationally using diagnostic and data analysis techniques
- utilising measuring and testing instruments to identify faults and abnormalities.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and include knowledge of:

- arrangements of power production plant
- hydro turbine generator synchronous condenser pump unit plant and equipment, location and

- operating parameters
- hydro turbine generator synchronous condenser pump unit plant operation
- manuals
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- WHS/OHS requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- workplace documentation
- workplace policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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